

A Collaboration Environment to Support Distributed eXtreme Programming

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The Problems Posed by eXtreme Programming:

The combination of a lightweight process and important interactions in XP creates a strong implication for the requirement of collocated collaborators. This is not always practical, in particular the end-user may not be located near the software engineering team.

Previous attempts to distribute XP have failed to adequately solve the problem in one of two ways. Some systems, such as MILOS [1] have failed because they are based as an ad. hoc. integration of existing tools rather than a system specifically designed for the purpose. Other systems, such as Joto and Rito-Silva's "adaptive workflow" [2] have failed because they do not support all the crucial features of XP, such as pair programming.

Hypothesis:

The key principle of this research is that it is both desirable and possible to create a system to support the distribution of XP so that there is no degradation of productivity.

Proposed Solution:

The proposed solution for this problem shall be based on development of support for the key interactions within distributed XP: daily meetings involving the customer, pair programming and continuous integration. The solution must also support the communication and awareness overheads created by distributing XP. The entire support environment for distributed XP shall be developed as a plug-in for the Eclipse IDE.

Evaluation:

The goal of this research is to develop a system that allows the distribution of XP without a degradation of productivity. Within XP the best metric for productivity would be project "velocity" (the rate of conversion from desired features to delivered features). The two key areas of success for a system of this nature are communication and awareness, both of which are quantifiable and whose contribution to project velocity can be assessed.

[1] F. Maurer and B. Dellen and F. Bendeck and S. Goldmann and H. Holz and B. Kötting and M. Schaaf. Merging project planning and web-enabled dynamic workflow technologies. In *IEEE Internet Computing*, May 2004

[2] Ricardo Jota and António Rito-Silva. Supporting Distributed Extreme Programming with Adaptive Workflow. In *Automated Software Engineering: Proceedings of the Workshop on Cooperative Support for Distributed Software Engineering Processes*, September 2004